YACHT CLUB WATER SYSTEM (PWSNO 1280045)
SOURCE WATER ASSESSMENT REPORT

January 9, 2001

State of Idaho
Department of Environmental Quality

Source Water Assessment for Yacht Club Water System

Under the Federal Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency (EPA) to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the Act. The Idaho Department of Environmental Quality is completing the assessments for all Idaho public drinking water systems. The assessment for your particular drinking water source is based on a land use inventory within a 1,000 foot radius of your drinking water source, sensitivity factors associated with the source and characteristics associated with either your aquifer or the watershed in which you live. Potential contaminant sources documented by Ray Gillette are included in the analysis.

This report, *Source Water Assessment for Yacht Club Water System* describes the public drinking water system, the associated potential contaminant sources located within a 1000-foot boundary around the drinking water source, and the susceptibility (risk) that may be associated with any associated potential contaminants. This assessment should be used as a planning tool, taken into account with local knowledge and concerns, to develop and implement appropriate protection measures for this system. **The results should <u>not be</u> used as an absolute measure of risk and are not intended to undermine the confidence in your water system.**

The Yacht Club Water System drinking water source is a 200-foot deep well located near a boat repair shop on Blackwell Island. The well is about 25 feet from the lake and is subject to flooding in periods of extraordinarily high water. Following the floods of 1996, the well casing was extended above the previous high water level and flood protection improvements were made to the pump house.

Bacteria present in water samples tested in April 2000, April and May 1997, January and February 1996 and in July 1994 may have been due to sampling technique error. UV light and sodium hypochlorite disinfect the well water before distribution. The system tests annually for nitrate contamination. Concentrations fluctuating between 0.022 and 0.877 mg/l have been detected in the water every year since 1995. The Maximum Contaminant Level for nitrate is 10 mg/l.

DEQ conducted a susceptibility analysis for the Yacht Club Water System December 14, 2000. The well is highly susceptible to microbial contamination because of its proximity to the lake. It ranked highly susceptible to volatile organic chemical and synthetic organic contamination due to high system construction and hydrologic sensitivity scores that are usually determined from the well log for the public water system. No well log is on file for the Yacht Club Water System and maximum points are added when information is lacking. The number of potential sources of SOC and VOC contaminants in the 1000-foot radius around the well was also a factor. The susceptibility of the well to inorganic chemical contamination is in the moderate range.

A copy of the susceptibility analysis for your system along with a map showing potential contaminant sources is included with this summary. Table 1 summarizes information regarding the potential contaminants within the 1000-foot boundary around the well.

Table 1. Yacht Club Potential Contaminant inventory

MAPID	Site Description	Potential Contaminants	Source of Information
1	Closed Underground Fuel Storage Tank	SOC, VOC	UST Database
2	Above Ground Fuel Storage Tank	SOC, VOC	AST Database
3	Surface Water	Microbial	Enhanced Inventory
4	filtered drainfield and holding tanks	Microbial, IOC	Enhanced Inventory
5	boat service repair storage docks	SOC, VOC	Enhanced Inventory
6	boat service repair storage docks	SOC, VOC	Enhanced Inventory
7	boat service repair storage docks	SOC, VOC	Enhanced Inventory
8	Historical Landfill	Rock, Dirt, Cement	Enhanced Inventory
9	Above Ground Fuel Storage	SOC, VOC	Enhanced Inventory

IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical

This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important. Whether the source is currently located in a "pristine" area or an area with numerous industrial and/or agricultural land uses, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

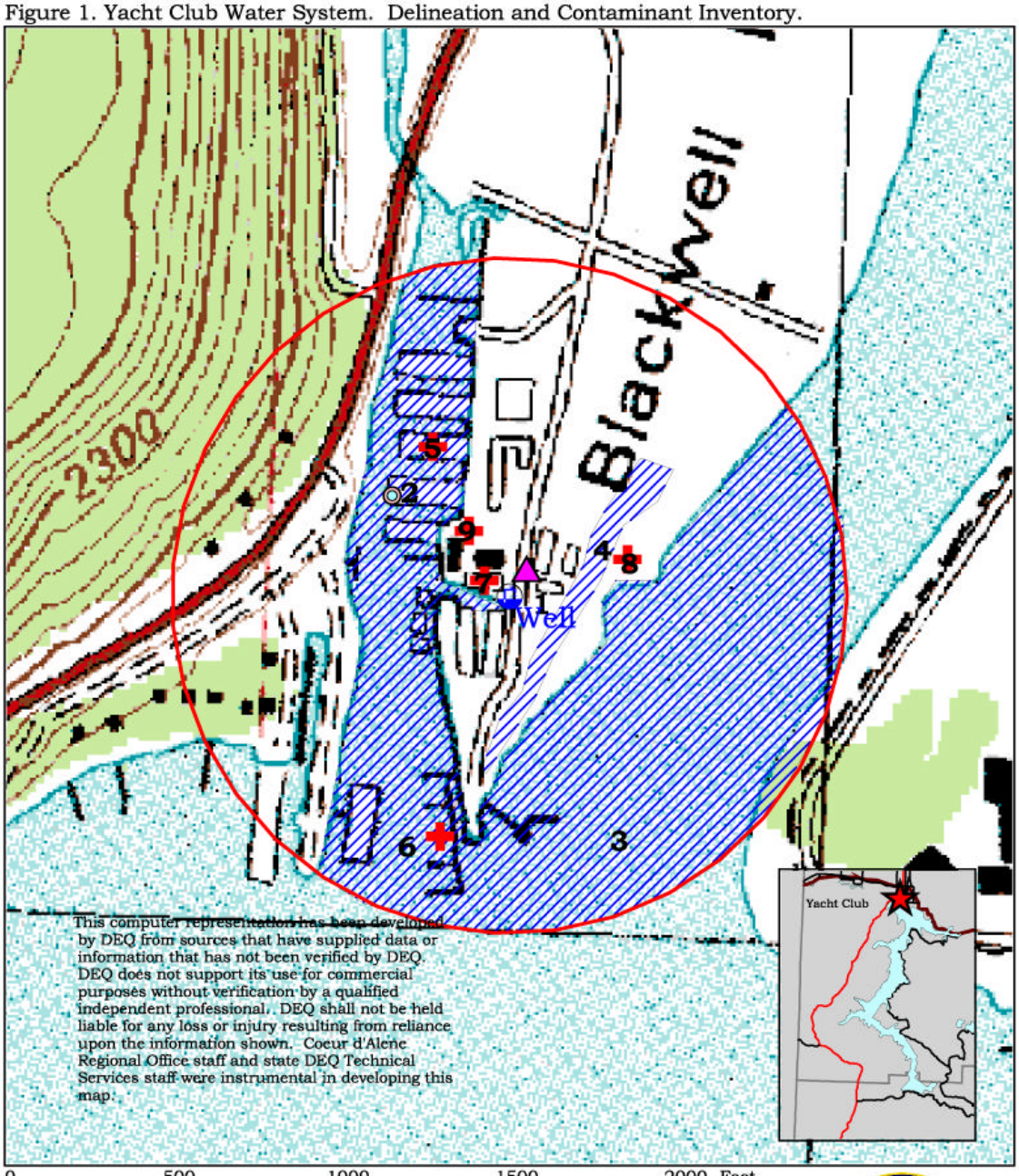
Source water protection activities for the Yacht Club Water System should focus on contingency planning for fuel or chemical spills within the designated source water area. The well is vulnerable because of its location in a flood prone area near two active marinas where fuel is stored and boat maintenance and repair chemicals are used. During the summer months portable toilets are set up along the dike road to accommodate marina customers. The marinas should work together to educate their customers and employees about threats to water quality from improperly handled fuel and cleaning compounds. Finally, all businesses operating within the 1000-foot radius around the well should review road and parking lot maintenance procedures to minimize the use of herbicides and other potential pollutants. Source water protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term.

For assistance in developing source water protection strategies please contact Tony Davis at the Coeur d'Alene Regional DEQ office at 208 769-1422.

DEQ website:

http://www.deq.state.id.us

Figure 1. Yacht Club Water System. Delineation and Contaminant Inventory.



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Ground Water Susceptibility

Public Water System Name : **YACHT CLUB WATER SYSTEM** WELL **WELL #1**

Public Water System Number : **1280045** 12/14/00 3:05:39 PM

1. System Construction		SCORE			
Drill Date	UNKNOWN				
Driller Log Available	NO				
Sanitary Survey (if yes, indicate date of last survey)	YES	1998			
Well meets IDWR construction standards	NO	1			
Wellhead and surface seal maintained	YES	0			
Casing and annular seal extend to low permeability unit	UNKNOWN	2			
Highest production 100 feet below static water level	UNKNOWN	1			
Well located outside the 100 year flood plain	NO	1			
Total System Construction Score		**5**			
2. Hydrologic Sensitivity					
Soils are poorly to moderately drained	NO	2			
Vadose zone composed of gravel, fractured rock or unknown	UNKNOWN	1			
Depth to first water > 300 feet	NO	1			
Aquitard present with > 50 feet cumulative thickness	UNKNOWN	2			
Total Hydrologic Score		**6**			
		IOC	VOC	SOC	Microbial
3. Potential Contaminant / Land Use - ZONE 1A (Sanitary Setback)		Score	Score	Score	Score
Land Use Zone 1A	LOW DENSITY COMMERCIAL	0	0	0	0
Farm chemical use high	NO	0	0	0	
IOC, VOC, SOC, or Microbial sources in Zone 1A	SURFACE WATER	NO	NO	NO	YES
Total Potential Contaminant Source/Land Use Score - Zone 1A		**0**	**0**	**0**	**0**
Potential Contaminant / Land Use - ZONE 1B (1000 FT RADIUS)					
Contaminant sources present (Number of Sources)	YES	1	4	4	0
(Score = # Sources X 2) 8 Points Maximum		2	8	8	0
Sources of Class II or III leacheable contaminants or Microbials	YES	1	4	4	
4 Points Maximum		1	4	4	
Zone 1B contains or intercepts a Group 1 Area	NO	0	0	0	0
Land use Zone 1B	Less Than 25% Agricultural Land	0	0	0	0
Total Potential Contaminant Source / Land Use Score - Zone 1B		**3**	**12**	**12**	**0**
Cumulative Potential Contaminant / Land Use Score		**3**	**12**	**12**	**0**
4. Final Susceptibility Source Score		**12**	**14**	**14**	**11**
5. Final Well Ranking		**Moderate**	**High**	**High**	**High***

*High due to presence of surface water within 50 feet of well

The final scores for the susceptibility analysis were determined using the following formulas:

1) VOC/SOC/IOC Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.27)

2) Microbial Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.35)

Final Susceptibility Scoring:

0 - 5 Low Susceptibility

6 - 12 Modera te Susceptibility

> 13 High Susceptibility.

POTENTIAL CONTAMINANT INVENTORY
LIST OF ACRONYMS AND DEFINITIONS

AST (Aboveground Storage Tanks) – Sites with aboveground storage tanks.

Business Mailing List – This list contains potential contaminant sites identified through a yellow pages database search of standard industry codes (SIC).

CERCLIS – This includes sites considered for listing under the **Comprehensive Environmental Response Compensation and Liability Act (CERCLA)**. CERCLA, more commonly known as ASuperfund@ is designed to clean up hazardous waste sites that are on the national priority list (NPL).

Cyanide Site – DEQ permitted and known historical sites/facilities using cyanide.

Dairy – Sites included in the primary contaminant source inventory represent those facilities regulated by Idaho State Department of Agriculture (ISDA) and may range from a few head to several thousand head of milking cows.

Deep Injection Well – Injection wells regulated under the Idaho Department of Water Resources generally for the disposal of stormwater runoff or agricultural field drainage.

Enhanced Inventory – Enhanced inventory locations are potential contaminant source sites added by the water system. These can include new sites not captured during the primary contaminant inventory, or corrected locations for sites not properly located during the primary contaminant inventory. Enhanced inventory sites can also include miscellaneous sites added by the Idaho Department of Environmental Quality (DEQ) during the primary contaminant inventory.

Floodplain – This is a coverage of the 100year floodplains.

Group 1 Sites – These are sites that show elevated levels of contaminants and are not within the priority one areas.

Inorganic Priority Area – Priority one areas where greater than 25% of the wells/springs show constituents higher than primary standards or other health standards.

Landfill – Areas of open and closed municipal and non-municipal landfills.

LUST (Leaking Underground Storage Tank) – Potential contaminant source sites associated with leaking underground storage tanks as regulated under RCRA.

Mines and Quarries – Mines and quarries permitted through the Idaho Department of Lands.)

Nitrate Priority Area – Area where greater than 25% of wells/springs show nitrate values above 5mg/l.

NPDES (National Pollutant Discharge Elimination System) – Sites with NPDES permits. The Clean Water Act requires that any discharge of a pollutant to waters of the United States from a point source must be authorized by an NPDES permit.

Organic Priority Areas – These are any areas where greater than 25 % of wells/springs show levels greater than 1% of the primary standard or other health standards.

Recharge Point – This includes active, proposed, and possible recharge sites on the Snake River Plain.

RICRIS – Site regulated under **Resource Conservation Recovery Act (RCRA)**. RCRA is commonly associated with the cradle to grave management approach for generation, storage, and disposal of hazardous wastes.

SARA Tier II (Superfund Amendments and Reauthorization Act Tier II Facilities) – These sites store certain types and amounts of hazardous materials and must be identified under the Community Right to Know Act.

Toxic Release Inventory (TRI) – The toxic release inventory list was developed as part of the Emergency Planning and Community Right to Know (Community Right to Know) Act passed in 1986. The Community Right to Know Act requires the reporting of any release of a chemical found on the TRI list.

UST (Underground Storage Tank) – Potential contaminant source sites associated with underground storage tanks regulated as regulated under RCRA.

Wastewater Land Applications Sites – These are areas where the land application of municipal or industrial wastewater is permitted by DEQ.

Wellheads – These are drinking water well locations regulated under the Safe Drinking Water Act. They are not treated as potential contaminant sources.

NOTE: Many of the potential contaminant sources were located using a geocoding program where mailing addresses are used to locate a facility. Field verification of potential contaminant sources is an important element of an enhanced inventory.

Where possible, a list of potential contaminant sites unable to be located with geocoding will be provided to water systems to determine if the potential contaminant sources are located within the source water assessment area.